



## Energy Tax Credits

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### Domestic Hot Water Heaters

**ACCORDING TO A STUDY** commissioned by the Northwest Energy Efficiency Alliance, two-thirds of hot water heater replacements occur only upon failure of the existing unit. Consequently, consumers have little time to research the technologies available for energy efficient replacement units. Federal and state of Montana tax credits have been developed to encourage homeowners to replace inefficient water heaters before an emergency arises.

As with most energy efficiency tax credits, those available for hot water heaters are: 30 percent of the investment, up to \$1,500 per taxpayer at the federal level and 25 percent of the investment, up to \$500 per taxpayer at the state level. Costs associated with the safe installation of an appliance are considered part of the investment. Montanans can also claim tank and pipe insulation and hot water flow limitation devices.

#### Hot Water Heaters: Tank

Both the federal and state governments recognize three categories of domestic hot water heaters for tax credit purposes. The first is the traditional tank-style heating unit fueled by natural gas, propane, or oil. There is no federal credit available for conventional electric tank-storage water heaters and Energy Star does not certify electric tank models. See the Resource section for more information on hot water heater criteria for inclusion in the Energy Star program.

For a natural gas or propane unit to qualify for the federal and state credits, it must exhibit 90 percent thermal energy efficiency or higher or be labeled with an Energy Factor of at least 0.82. The latter standard measures performance of the appliance over time and is particularly difficult for manufacturers to meet.

Do not look to Energy Star as a guide for residential-size tank hot water heaters to claim either the federal or state credits. Rather, simply look for products certified to meet the numbers. Economy of scale allows larger, commercial-sized tank heaters to more easily meet the thermal efficiency standards. But some tank heaters in the 30-gallon to 60-gallon capacity range meet the 90 percent efficiency standard, even though they may be marketed as “commercial” models.

#### Domestic Hot Water Heaters: Tankless

Tankless water heaters are the second main category and may also be known as instantaneous or on-demand heaters. These units offer energy efficiency by heating water only as it is being used — there is no storage capability. A sensor in the unit reads a drop in water pressure as a hot water faucet is turned on. The burners come on and water is heated as it flows. The sensor turns off the burners when the hot water spigot is closed. Models are available that use electricity, natural gas or propane. “Whole-house” units are available as well as units that serve

a limited number of faucets. Note, however, that provisions governing the federal tax credit preclude models that use electricity and the Montana tax credit generally mirrors the federal provisions. Moreover, Energy Star does not certify electric tankless water heaters.

Unlike the tank storage heaters, Energy Star is the guide for tankless hot water heaters to capture the federal credit. All Energy Star-rated tankless heaters meet the standards to capture the federal credit and, as previously mentioned, all will be natural gas or propane fueled. An Energy Factor of 0.82 or greater is the threshold. Keep in mind these replacement units require proper venting, possible gas line replacement and electric wiring to function safely and effectively. These investments can exceed the cost of the appliance itself, but may be included toward federal and state credits.

The AHRI offers a regularly updated website of qualified tankless and tank-storage water heating appliances at: [www.ahrinet.org/ARI/util/showdoc.aspx?doc=1516](http://www.ahrinet.org/ARI/util/showdoc.aspx?doc=1516). These listings may not be all-inclusive.

### **Heat Pump and Gas Condensing Water Heaters**

A third category of water heaters eligible for the federal tax credit involves heat pump technology. These units use vapor compression of a refrigerant to move the heat in ambient air to heat water in a storage tank. The condenser coil for the heated refrigerant is in the hot water storage tank. As with other forms of heat pumps, the technology is efficient because heat is “moved” from one form — ambient air — to another — water. The operating cost is for electricity to run fans and pumps.

Heat pump water heaters accounted for less than 2,000 residential sales in 2005 — nationally. Nonetheless, according to the EPA, if just 10 percent of the nation’s 4.8 million electric water heater sales were current heat pump technology, the aggregate energy savings could amount to nearly 1.3 billion kilowatt-hours per year. Consequently, the federal government and Energy Star wish to encourage market share for the technology. The limited products available with an Energy Star rating (Energy Factor equal to or greater than 2.0) are eligible for the federal and state credits.

Another technology waiting in the wings is the gas condensing hot water heater. Gas condensing boilers have been in recent use for space heating, but residential hot water heaters are only now becoming available. These systems use post-combustion gas vapors to further heat the water.

### **Resources**

The Tax Incentive Assistance Project (TIAP) is a coalition of public interest nonprofit groups, government agencies, and other organizations in the energy efficiency field. Its website is designed to give consumers and businesses the information needed to make use of the federal income tax incentives for energy efficient products and technologies. The TIAP website can be accessed at: <http://energytaxincentives.org/>

The Database for State Incentives for Renewables and Incentives (DSIRE) offers good descriptions of state and federal incentives at its national website: [www.dsireusa.org/](http://www.dsireusa.org/).

The Montana Department of Revenue offers a website that shows the overlap of state and federal energy tax credits at: <http://recovery.mt.gov/revenue/default.mcp>. The site also offers links for additional information about state and federal conservation tax credits. You can also

access the Montana tax form ENRG-B, which is used for alternative energy projects such as ground-source heating systems. The specific geothermal tax credit is form ENRG-A. The form ENRG-C is used for energy conservation work. The forms include questions and answers on the back.

The Montana Department of Environmental Quality (DEQ) offers federal and state tax incentive information at its Energize Montana website at: <http://deq.mt.gov/Energy/default.mcp>

The Energy Star criteria for hot water heaters are presented as a document at the website: [www.energystar.gov/ia/partners/prod\\_development/new\\_specs/downloads/water\\_heaters/Water\\_HeaterDraftCriteriaAnalysis.pdf](http://www.energystar.gov/ia/partners/prod_development/new_specs/downloads/water_heaters/Water_HeaterDraftCriteriaAnalysis.pdf). Additional Energy Star information on water heaters is available at: [www.energystar.gov/index.cfm?c=water\\_heat.pr\\_crit\\_water\\_heaters](http://www.energystar.gov/index.cfm?c=water_heat.pr_crit_water_heaters)